

Claim Amendments

1. (previously presented) Apparatus for testing circuitry having an array of solder-ball contacts or connection probes of a selected size, said solder-ball contacts having a contact area and a peripheral area, comprising:

a support substrate having a working surface;

a multiplicity of conductive pads mounted on said working surface;

a multiplicity of conductive pathways extending from said multiplicity of conductive pads to test circuitry;

at least one conductive member formed on each of said multiplicity of conductive pads and extending away from said working surface, said at least one conductive member comprising a wire bonder stud bump; and

said conductive members formed on said conductive pads positioned on said support substrate to make an electrical connection with said peripheral area of said solder-ball contacts or connection points of a circuit placed against said apparatus.

2. (original) The apparatus of Claim 1 wherein said at least one conductive member formed on said conductive pads comprises two conductive members located to receive said peripheral area of a solder-ball contact for making said electrical connection.

3. (original) The apparatus of Claim 1 wherein said at least one conductive member formed on said conductive pads comprises three conductive members located to form an interconnection nest for making said electrical connection with said peripheral area.

4. (original) The apparatus of Claim 1 wherein said at least one conductive member formed on said conductive pads comprises at least four conductive members located to form an interconnection nest for making said electrical connection with said peripheral area.

5. (original) The apparatus of Claim 1 wherein said at least one conductive member is formed from one of gold wire and aluminum wire.
6. (original) The apparatus of Claim 1 wherein said at least one conductive member formed on each of said conductive pads comprises a length of wire bonded to said conductive pad.
7. (canceled)
8. (canceled)
9. (canceled)
10. (previously presented) The apparatus of Claim 1 wherein said support substrate comprises a planar insulating material and said conductive pathways comprise conductive traces formed on said planar insulating material.
11. (original) The apparatus of Claim 10 wherein said conductive pathways are formed on said working surface.
12. (original) The apparatus of Claim 10 wherein said conductive pathways are formed substantially on a surface opposite said working surface and extend from said opposite surface through said insulating material to a conductive pad on said working surface.
13. (canceled)
14. (currently amended) The apparatus of Claim 1 wherein one or more of said conductive members comprise wire bonder stud bumps bonded on top of

another wire bonder stud bump, said wire bonder stud bumps bonded on top having the same composition as said another wire bonder stud bump.

15. (canceled)

16. (canceled)

17. (previously presented) Apparatus for testing circuitry having an array of solder-ball contacts of a selected size with a contact area and peripheral area, comprising:

a planar insulating support substrate having a working surface and a back surface;

a multiplicity of conductive pads formed on said working surface;

conductive pathways formed on said working surface leading from said multiplicity of conductive pads to testing circuitry;

at least three conductive lengths of wire extending away from said working surface bonded to a selected one of said multiplicity of conductive pads by a wire bonding machine to form an interconnecting nest; and

said interconnecting nest positioned on said support substrate to receive a solder-ball contact point and making an electrical connection with said peripheral area of said received solder-ball for testing said circuitry.

18. (canceled)

19. (canceled)

20. (canceled)

21. (canceled)

22. (canceled)

23. (canceled)

24. (canceled)

25. (canceled)

26. (currently amended) Apparatus for testing circuitry having an array of solder-ball contacts or connection probes of a selected size, said solder-ball contacts having a contact area and a peripheral area, comprising:

- a support substrate having a working surface;

- a multiplicity of conductive pads mounted on said working surface;

- a multiplicity of conductive pathways extending from said multiplicity of conductive pads to test circuitry;

- at least one conductive member formed on each of said multiplicity of conductive pads and extending away from said working surface, said at least one conductive member comprising a wire having first and second ends bonded to said conductive pad; and

- said conductive members formed on said conductive pads positioned on said support substrate to make an electrical connection with said peripheral area of said solder-ball contacts or connection points of a circuit placed against said apparatus.

27. (previously presented) The apparatus of Claim 26, wherein a point on said wire between said first and second ends is raised off of said conductive pad.

28. (previously presented) The apparatus of Claim 27, wherein said raised point of said wire is supported by mold compound.

29. (previously presented) An apparatus for testing an integrated circuit having solder ball interconnects, comprising:

a substrate;
a plurality of pads on said substrate;
a plurality of wire bonder stud bumps on at least one of said plurality of pads, whereby said stud bumps form a nest for contacting one of said solder ball interconnects.

30. (previously presented) The apparatus of Claim 29, further comprising a wire extending from said stud bump away from said substrate.

31. (previously presented) The apparatus of Claim 29, wherein said stud bump and said wire are gold.

32. (previously presented) The apparatus of Claim 29, wherein said stud bump and said wire are aluminum.